## (19) World Intellectual Property Organization International Bureau



### 

## (43) International Publication Date 28 March 2002 (28.03.2002)

#### **PCT**

# (10) International Publication Number WO 02/24275 A3

(51) International Patent Classification7:

\_\_\_\_

(21) International Application Number: PCT/US01/29106

A61N 1/39

(22) International Filing Date:

14 September 2001 (14.09.2001)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

09/663,606

18 September 2000 (18.09.2000) U

- (71) Applicant (for all designated States except US): CAMERON HEALTH, INC. [US/US]: 924-A Calle Negocio, San Clemente, CA 92673 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): BARDY, Gust, H.

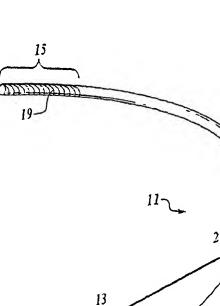
[US/US]: 2518 Constance Drive West, Seattle, WA 98199 (US). CAPPATO, Riccardo [IT/IT]: Via Fluvio Testi, 22, 1-44100 Ferrara (IT).

- (74) Agents: PETTIT, Jonathan, L. et al.: Brobeck. Phleger & Harrison, 12390 El Camino Real. San Diego. CA 92130 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (84) Designated States (regional): ARIPO patent (GH. GM. KE. LS, MW. MZ. SD. SL, SZ. TZ. UG. ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European

[Continued on next page]

(54) Title: UNITARY SUBCUTANEOUS ONLY IMPLANTABLE CARDIOVERTER-DEBRIBILLATOR AND OPTIONAL PACER

23



(57) Abstract: A unitary subcutaneous cardioverter-defibrillator implantable disclosed which has a long thin housing in the shape of a patient's rib. The housing contains a source of electrical energy, a capacitor, and operational circuitry that senses the presence of potentially fatal heart rhythms. Provided on the housing are cardioversion/defibrillation electrodes located to deliver electrical cardioversion-defibrillation energy when the operational circuitry senses a potentially fatal heart rhythm. The unitary subcutaneous implantable cardioverter-defibrillator does not have a transvenous, intracardiac, epicardial, or subcutaneous electrode.

WO 02/24275 A3



patent (AT. BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report: 30 May 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

#### IN :RNATIONAL SEARCH REPORT

Inter. ..onal Application No PCT/US 01/29106

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 A61N1/39

According to International Patent Classification (IPC) or to both national classification and IPC

#### B. FIELDS SEARCHED

 $\begin{array}{ll} \mbox{Minimum documentation searched (classification system followed by classification symbols)} \\ \mbox{IPC 7} & \mbox{A61N} & \mbox{A61B} \end{array}$ 

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

#### EPO-Internal

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to daim No.
A	US 5 385 574 A (HAUSER ROBERT G ET AL) 31 January 1995 (1995-01-31)	1,35,69, 85,96, 102,103, 105-108
	the whole document	
A	US 4 157 720 A (GREATBATCH WILSON) 12 June 1979 (1979-06-12)	1,35,69, 85,96, 102,103, 105-108
	the whole document	
A	EP 0 627 237 A (TRABUCCO HECTOR OSVALDO ;GAVRIELIDES JORDAN (DE)) 7 December 1994 (1994-12-07)	1,35,69, 85,96, 102,103, 105-108
	the whole document	
	-/	

1	
X Further documents are listed in the continuation of box C.	Patent tamily members are listed in annex.
Special categories of cited documents:  A' document defining the general state of the art which is not considered to be of particular relevance  E' earlier document but published on or after the international filing date  L' document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  O' document referring to an oral disclosure, use, exhibition or other means  P' document published prior to the international filing date but later than the priority date claimed	<ul> <li>'T' later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</li> <li>'X' document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</li> <li>'Y' document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</li> <li>'&amp;' document member of the same patent family</li> </ul>
Date of the actual completion of the international search  14 March 2002	Date of mailing of the international search report  21/03/2002
Name and mailing address of the ISA  European Patent Office, P.B. 5818 Patentlaan 2  NL - 2280 HV Rijswijk  Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.  Fax: (+31-70) 340-3016	Authorized officer Ferrigno, A

#### IN' RNATIONAL SEARCH REPORT

Intel. .ional Application No PCT/US 01/29106

		PC1/US 01/	PCT/US 01/29106		
	ATION) DOCUMENTS CONSIDERED TO BE RELEVANT				
Category °	Citation of document, with indication, where appropriate, of the relevant passages	['	Relevant to claim No.		
A	US 5 331 966 A (BENNETT TOM D ET AL) 26 July 1994 (1994-07-26) the whole document		1,35,69, 85,96, 102,103, 105-108		
Y	WO 99 53991 A (ALZA CORP) 28 October 1999 (1999-10-28) the whole document		113		
Y	US 6 093 173 A (BALCETA JOBERT P ET AL) 25 July 2000 (2000-07-25) the whole document		113		
A	WO 97 29802 A (LOEB GERALD E ;RICHMOND FRANCES J R (CA); ADVANCED BIONICS CORP (U) 21 August 1997 (1997-08-21) the whole document		113		
	·				
			,		
		ļ			
		ļ			
	•				
			•		
!					

### FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-31,35-108

unitary subcutaneous implantable cardioverter-defibrillator

2. Claim : 113

apparatus for implanting an implantable cardioverter-defibrillator

### IN :RNATIONAL SEARCH REPORT

Information on patent family members

Intermination No PCT/US 01/29106

Patent document cited in search report		Publication date		Patent family member(s)	date
US 5385574	Α	31-01-1995	US	5133353 A	28-07-1992
			AT	168024 T	15-07-1998
			ΑU	641224 B2	16-09-1993
			AU	7354591 A	07-11-1991
			CA	2040800 A1	26-10-1991
			DE	69129716 D1	13-08-1998
			DĒ	69129716 T2	24-12-1998
			DK	453761 T3	19-04-1999
			EP	0453761 A1	30-10-1991
			ES	2120411 T3	01-11-1998
			JP	5064666 A	19-03-1993
			ÜS	6157860 A	05-12-2000
			US	5713926 A	03-02-1998
			US	6280462 B1	28-08-2001
			US	5916238 A	29-06-1999
					2F 02 1000
US 4157720	Α	12-06-1979	AU	521296 B2	25-03-1982
			AU	3986278 A	20-03-1980
			CA	1120548 A1	23-03-1982
			DE	2840307 A1	29-03-1979 13-04-1979
			FR	2403075 A1	28-03-1979
			GB	2004188 A ,B	31-03-1981
			IL	55526 A	16-05-1979
			JP	54060791 A	05-08-1982
			MX	146747 A	20-03-1979
			NL SE	7809422 A 7809645 A	17-03-1979
EP 0627237	Α	07-12-1994	US	5243977 A	14-09-1993
			EP	0627237 A1	07-12-1994
US 5331966	A	26-07-1994	AU	654552 B2	10-11-1994
			AU	1750692 A	02-11-1992
			CA	2106378 A1	06-10-1992
			DE	69210395 D1	05-06-1996
			DE	69210395 T2	09-01-1997
			EP	0578748 Al	19-01-1994
			JP	2655204 B2	17-09-1997
			JP	6505662 T	30-06-1994
			WO	9217240 A1	15-10-1992
WO 9953991	A	28-10-1999	AU	3748899 A	08-11-1999
MO 3333331	п	20 10 1999	TW	442273 B	23-06-2001
			WO	9953991 A1	28-10-1999
US 6093173	Α	25-07-2000	NONE		
		21-08-1997	 WO	9729802 A2	21-08-199
WO 9729802	A	21-08-1997	US	6185455 B1	06-02-200
			US	6214032 B1	10-04-200
			0.0	6051017 A	18-04-200